

THE CLAIMS

What is claimed is:

1. A hard disk drive, comprising:
 - at least one hard disk;
 - an actuator;
 - a secondary actuator,
 - a read/write head corresponding each hard disk; and
 - at least one crash stop for the actuator

at least one hard disk having a servo track pitch that is set by (a) positioning the actuator against the crash stop, (b) writing a burst pattern on at least one hard disk while the actuator is positioned against the crash stop and the read/write head is in a first position, (c) changing a bias voltage applied to the secondary actuator by a predetermined bias voltage increment for a predetermined number of times to change the position of the read/write head a corresponding number of times and writing a burst pattern on at least one hard disk at each respective changed position of the read/write head, (d) determining an amount of overlap for at least one selected burst pattern having two burst patterns that are adjacent to the burst pattern, (e) terminating the method for setting the initial servo track pitch when the amount of overlap determined for each selected burst pattern is within a selected criterion of a predetermined target overlap value; (f) increasing the predetermined bias voltage increment when the amount of overlap for each selected burst pattern is greater than the predetermined target overlap value, and decreasing the predetermined bias voltage increment when the amount of overlap for each selected burst pattern is less than the predetermined target overlap value, and (g) repeating steps (a) through (e) with the new predetermined bias voltage increment.

2. The hard disk drive according to claim 1, wherein when the amount of overlap is determined for each selected burst pattern, an amplitude of a plurality of selected burst patterns is measured, each selected burst pattern having two adjacent burst patterns, an amplitude of each burst pattern that is adjacent to each selected burst pattern is measured, and the overlap is determined for each selected burst pattern as a sum of the amplitudes of the burst patterns that are adjacent to the selected burst pattern divided by the amplitude of the selected burst pattern.

3. The hard disk drive according to claim 2, wherein when the amplitude of the plurality of selected burst patterns is measured and when the amplitude of each burst pattern are each performed a predetermined number of times is measured, the measured amplitudes of each respective selected burst pattern are averaged, the measured amplitudes of each burst pattern that is adjacent to each respective burst pattern is averaged, and the overlap for each respective selected burst pattern is determined is based on the averaged measured amplitudes of each respective burst pattern.

4. The hard disk drive according to claim 1, wherein the predetermined number of times the position of the read/write head is changed is sixteen.

5. The hard disk drive according to claim 4, wherein the overlap is determined for fourteen burst patterns.

6. The hard disk drive according to claim 1, wherein the crash stop is an inside diameter crash stop.

7. The hard disk drive according to claim 1, wherein the crash stop is an outside diameter crash stop.

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8. The hard disk drive according to claim 1, wherein the secondary actuator is a microactuator.

9. The hard disk drive according to claim 1, wherein the secondary actuator is a milliactuator.